AMENDMENTS TO THE CLAIMS

Please amend Claims 1-3, 17, 20-22, and 25-29, and cancel Claims 16, 23, and 24 without prejudice or disclaimer. Claims 4-11, 12-15, 18, and 19 remain as previously pending.

1. (Currently Amended) An audio enhancement system uniquely adapted for use in a near-field audio reproduction system, ~~such as a portable stereo system or a multimedia computer system~~ the audio enhancement system comprising:

a first high-pass filter which receives a first input, the first high-pass filter configured to filter a set of lower frequencies in the first input relative to other frequencies in the first input;

a second high-pass filter which receives a second input, the second high-pass filter configured to filter a set of lower frequencies in the second input relative to other frequencies in the second input;

a difference circuit that receives the filtered ~~left~~ first and ~~right~~ second inputs supplied by an audio reproduction system, wherein the difference circuit identifies difference information in the ~~left~~ first and ~~right~~ second inputs;

an equalizer in communication with the difference circuit, the equalizer configured to modifying the frequency response of the difference information to create processed difference information having a level of equalization varying with respect to the frequency component of the processed difference information, wherein the level of equalization is adapted to exploit the acoustics of a human ear and especially those unique to a near-field audio system, the level of equalization comprising:

a maximum gain occurring at a maximum-gain frequency of approximately 100 to 150 Hz, a minimum gain occurring at a minimum-gain frequency of approximately 1680 to 2520 Hz, and a mid-gain of approximately one-half the difference between the maximum gain and the minimum gain occurring at a mid-gain frequency of approximately 5600 to 8400 Hz;

bass attenuation of the difference information relative to the maximum gain, the bass attenuation occurring below the maximum-gain

frequency and increasing with a reduction in difference-information frequency to prevent over_amplification of a speaker; and

attenuation of the difference information relative to the maximum gain at a mid-range of frequencies, the attenuation occurring above the maximum gain frequency and increasing with a corresponding increase in difference-information frequency up to the minimum-gain frequency, the attenuation decreasing above the minimum-gain frequency with an increase in difference-information frequency up to the mid-gain frequency; and

a summing circuit that combines the processed difference information with at least a portion of the set of lower frequencies in the ~~left~~ first input to create an enhanced ~~left~~ first output, the summing circuit also configured to combine the processed difference information with at least a portion of the set of lower frequencies in the ~~right~~ second input to create an enhanced ~~right~~ second output.

2. (Currently Amended) The audio enhancement system of ~~claim~~ Claim 1 wherein the difference circuit, the equalizer and the summing circuit are implemented in a digital signal processor.

3. (Currently Amended) The audio enhancement system of ~~claim~~ Claim 1 wherein the bass attenuation increases at a rate of approximately 6 decibels per octave, the mid-range attenuation ~~is increasing~~increases below the minimum-gain frequency at a rate of approximately 6 decibels per octave, and the mid-range attenuation ~~is decreasing~~decreases above the minimum-gain frequency at a rate of approximately 6 decibels per octave.

4. (Original) The audio enhancement system of Claim 1 further comprising an attenuator that attenuates the difference information by a fixed amount substantially across an audible frequency spectrum.

5. (Previously Presented) The audio enhancement system of Claim 1, wherein the first and second high-pass filters attenuate very low frequency components of the first and second inputs.

6. (Previously Presented) The audio enhancement system of Claim 5 wherein the first and second high-pass filters are implemented in a digital signal processor.

7. (Previously Presented) The audio enhancement system of Claim 6 wherein the first and second high-pass filters have a cutoff frequency in the range of 125 to 200 Hz.

8. (Original) The apparatus of Claim 1 further comprising a level adjust circuit in communication with the difference circuit, the level adjust circuit configured to adjust the level of the difference information.

9. (Original) An apparatus for enhancing sound, the apparatus comprising:

a first high-pass filter which receives a first input, the first high-pass filter configured to filter a set of lower frequencies in the first input relative to other frequencies in the first input;

a second high-pass filter which receives a second input, the second high-pass filter configured to filter a set of lower frequencies in the second input relative to other frequencies in the second input;

a difference circuit in communication with the first and second high-pass filters, the difference circuit configured to identify the difference information in the filtered first and second inputs;

an equalizer in communication with the difference circuit, the equalizer configured to spectrally shape the difference information; and

a summing circuit in communication with the equalizer and the first input and the second input, the summing circuit configured to combine the spectrally shaped difference information with the set of lower frequencies in the first input to generate a first output, the summing circuit further configured to combine the spectrally shaped difference information with the set of lower frequencies in the second input to generate a second output.

10. (Original) The apparatus of Claim 9 wherein the difference information is spectrally shaped by the equalizer by applying a perspective curve characterized by a maximum gain within a first frequency range of 100 to 150 Hz and the curve characterized by a minimum gain within a second frequency range of 1680 to 2520 Hz,

wherein the curve decreases at a rate of approximately 6 decibels per octave below the first frequency range and above the first frequency range towards the second frequency range, the curve further increasing at a rate of approximately 6 decibels per octave above the second frequency range.

11. (Original) The apparatus of Claim 10 wherein the maximum gain and the minimum gain are separated by approximately 12 decibels.

12. (Previously Presented) The apparatus of Claim 10 wherein the perspective curve is adjustable to raise or lower the maximum and minimum-gain frequencies with the maximum-gain range and the minimum-gain range.

13. (Original) The apparatus of Claim 9 further comprising a level adjust circuit in communication with the difference circuit, the level adjust circuit configured to adjust the level of the difference information.

14. (Original) The apparatus of Claim 9 wherein the first and second high-pass filters, the difference circuit, the equalizer, and the summing circuit are implemented in a digital signal processor.

15. (Original) The apparatus of Claim 9 further comprising an attenuator that attenuates the difference information by a fixed amount substantially across an audible frequency spectrum.

16. (Canceled)

17. (Currently Amended) An apparatus for enhancing sound, the apparatus comprising:

a first input and a second input wherein the first and second inputs comprise at least a set of lower frequencies relative to other frequencies;

a difference circuit configured to identify difference information in the first and second inputs;

an equalizer configured to spectrally shape the difference information in the first and second inputs, ~~The apparatus of Claim 16~~ wherein the difference information is spectrally shaped by the equalizer by applying a perspective curve characterized by a maximum gain within a first frequency range of 100 to 150 Hz and the curve characterized by a minimum gain within a second frequency range of 1680 to 2520 Hz, wherein the curve decreases at a rate of approximately 6

decibels per octave below the first frequency range and above the first frequency range towards the second frequency range, the curve further increasing at a rate of approximately 6 decibels per octave above the second frequency range, and wherein the equalizer does not spectrally shape the sets of lower frequencies; and

a summing circuit configured to combine the spectrally shaped difference information with at least a portion of the set of lower frequencies in the first input to generate a first output, the summing circuit further configured to combine the spectrally shaped difference information with at least a portion of the set of lower frequencies in the second input to generate a second output.

18. (Original) The apparatus of Claim 17 wherein the maximum gain and the minimum gain are separated by approximately 12 decibels.

19. (Previously Presented) The apparatus of Claim 17 wherein the perspective curve is adjustable to raise or lower the maximum and minimum-gain frequencies with the maximum-gain range and the minimum-gain range.

20. (Currently Amended) The apparatus of Claim ~~16~~ 17 further comprising a level adjust circuit in communication with the difference circuit, the level adjust circuit configured to adjust the level of the difference information.

21. (Currently Amended) The apparatus of Claim ~~16~~ 17 wherein the difference circuit, the equalizer, and the summing circuit are implemented in a digital signal processor.

22. (Currently Amended) The apparatus of Claim ~~16~~ 17 further comprising an attenuator that attenuates the difference information by a fixed amount substantially across an audible frequency spectrum.

23. (Canceled)

24. (Canceled)

25. (Currently Amended) A method for enhancing sound, the method comprising:

receiving a first input and a second input, wherein the first and second inputs comprise at least a set of lower frequencies relative to other frequencies;

a difference circuit configured to identify difference information in the first and second inputs;

spectrally shaping the difference information while not spectrally shaping the set of lower frequencies, wherein spectrally shaping the difference information boosts the amplitudes of a second set of frequencies relative to the amplitudes of the set of lower frequencies, the second set of frequencies occurring at higher frequencies than the set of lower frequencies, and ~~The method of Claim 24~~ wherein a maximum boost of the second set of frequencies occurs at approximately 125 hertz; and

combining the spectrally shaped difference information with the set of lower frequencies to generate an output that contains the spectrally shaped difference information and at least a portion of the set of lower frequencies.

26. (Currently Amended) The method of Claim ~~24~~ 25 wherein spectrally shaping the difference information further reduces the amplitudes of a third set of frequencies relative to the amplitudes of the second set of frequencies, the third set of frequencies occurring at higher frequencies than the second set of frequencies.

27. (Currently Amended) The method ~~as defined in~~of Claim 26 wherein a maximum reduction of the amplitudes of the third set of frequencies occurs at approximately 2.1 kilohertz.

28. (Currently Amended) The method of Claim 26 wherein ~~the act of~~ spectrally shaping the difference information further boosts the amplitudes of a fourth set of frequencies relative to the amplitudes of the third set of frequencies, the fourth set of frequencies occurring at higher frequencies than the third set of frequencies.

29. (Currently Amended) The method ~~as defined in~~of Claim 28 wherein a maximum boost of the amplitudes of the fourth set of frequencies occurs above approximately 2.1 kilohertz.